基于HJ-1A/1B CCD数据的雹灾监测与评价

Hail monitoring and evaluation by remote sensing based on HJ-1A/1B CCD

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作者	单位
李 娜	1. 农业部资源遥感与数字农业重点开放实验室，北京 100081； 2. 东北农业大学资源与环境学院，哈尔滨 150030
刘焕军	1. 农业部资源遥感与数字农业重点开放实验室，北京 100081； 2. 东北农业大学资源与环境学院，哈尔滨 150030
黄文江	3. 北京农业信息技术研究中心，北京 100097
宋 戈	2. 东北农业大学资源与环境学院，哈尔滨 150030
张新乐	2. 东北农业大学资源与环境学院，哈尔滨 150030
尚倩倩	2. 东北农业大学资源与环境学院，哈尔滨 150030

中文摘要：

　　由于雹灾的突发性、灾后影响的显著空间异质性，雹灾监测与灾后评价的研究相对较少。以黑龙江甘南县典型雹灾为研究对象，利用HJ-1A/1B CCD等遥感影像与地面实测高光谱数据，进行雹灾遥感监测与评价研究。基于实测光谱数据分析了不同灾害程度农作物的反射光谱特征及植被指数变化；利用2个时相的遥感影像数据，结合地面调查，通过对植被指数分级进行雹灾监测与评价，并结合另一个时相的数据做了验证。结果表明：不同灾害程度作物的反射光谱特征差异显著；运用植被指数分级进行雹灾监测是可行的，基于归一化差分植被指数差值图分级得到的不同雹灾程度范围与实际情况相符，而基于比值植被指数差值图的分级结果则与实际结果差距较大；根据雹灾遥感分级结果分析了雹灾空间分布特征。研究结果可对雹灾监测与评价提供理论与技术支持。

英文摘要：

　　Because of the burstiness of the hail and the significant spatial heterogeneity of post-disaster impact, there are relatively fewer studies about hail monitoring and post-disaster evaluation. The typical hail in Gannan county of Heilongjiang province was selected as the study area, remote sensing images of HJ-1A/1B CCD and ground-measured hyperspectral reflectance data were used to carry on hail monitoring and post-disaster evaluation. This paper analyzed the reflection spectral characteristics and vegetation index of crops in different hail disasters extends based on measured spectral data. Hail monitoring and evaluation were conducted by vegetation index classification and ground investigation, using remote sensing image data of two time phases, and then the validation was made with the data of another phase. The results showed that the spectral reflectance characteristics of crops with different disaster degrees were significantly different; It was feasible to carry on hail monitoring by vegetation index classification; The different hail degree range got by NDVI difference value drawings of the RVI appeared coincident with the actual situation; spatial distribution characteristics are analyzed according to remote sensing classification results. The results can provide theoretical and technical support for hail monitoring and evaluation.

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